AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

Claims 1-13 (cancelled)

Claim 14 (currently amended): A method for controlling a device for an ablation of a part of a human eye using laser irradiation, the control being exercised using an electronic data processing system, the method comprising:

determining optic and geometrical data of the eye; ~~and~~

performing a graphic simulation of the ablation in the form of a graphic visualization; and

controlling the device for the ablation according to the graphic visualization using the optic and geometrical data of the eye.

Claim 15 (previously presented): The method as recited in claim 14, further comprising inputting a plurality of treatment parameters manually using a central input/output device.

Claim 16 (previously presented): The method as recited in claim 15, further comprising determining a plurality of operating parameters, wherein the determining includes at least one of:

a) establishing a topography data of the eye;

b) establishing a refraction data of the eye;

c) establishing a higher-order aberration data of the eye using wave-front measurement;

d) establishing a pachymetry data of the eye;

e) establishing a pupillometry data;

f) point-accurate overlaying of all the measurement data from a) through e) in a fixed coordinates system of the eye;

g) calculating a height data of deviations relative to a reference surface;

h) calculating a height data difference relative to the reference surface;

2

g) calculating an adapted height data difference relative to the reference surface;

h) calculating ablation coordinates for the device, wherein the device includes a laser.

Claim 17 (previously presented): The method as recited in claim 16, wherein the establishing of the refraction data includes establishing at least one of a subjective and an objective refraction data.

Claim 18 (previously presented): The method as recited in claim 16, further comprising calculating a height data of deviations of a cornea surface of the eye relative to a reference surface using at least one of the topography data and the refraction data.

Claim 19 (previously presented): The method as recited in claim 18, further comprising determining a tissue to be abraded from the cornea of the eye using the height data of the deviations of the cornea surface.

Claim 20 (previously presented): The method as recited in claim 16, further comprising determining a result using the topography data, the result including at least one of a K value, a curvature map, a topography map, and a power map, and wherein the controlling the device for the ablation is performed using the result.

Claim 21 (previously presented): The method as recited in claim 16, wherein the establishing of the refraction data of the eye includes establishing at least one of spherical refraction data and cylindrical refraction data.

Claim 22 (previously presented): The method as recited in claim 16, wherein the reference surface is an ellipsoid.

Claim 23 (previously presented): The method as recited in claim 16, wherein a refraction reference surface of the refraction data is a spheroid.

3

Claim 24 (previously presented): The method as recited in claim 14, wherein the device for ablation includes at least one of a laser and a wave-front measurement device.

Claim 25 (previously presented): A device for treating a human eye using laser irradiation, the device comprising:

a aberrometry apparatus configured to measure an aberrometry of the eye;

a topography apparatus configured to measure a topography of the eye;

a pachymetry apparatus configured to measure a pachymetry of the eye;

an overlaying apparatus configured to provide a point-accurate, centred overlaying of the aberrometry, topography, and pachymetry;

a laser unit; and

an electronic data-processing apparatus configured to link the aberrometry, topography, pachymetry and further patient data to ablation values using a processing model.

Claim 26 (previously presented): The device as recited in claim 24, further comprising a pupillometry apparatus for measuring a pupillometry of the eye.

Claim 27 (previously presented): The device as recited in claim 25, wherein the aberrometry apparatus, the topography apparatus, the pachymetry apparatus, and the pupillometry apparatus are disposed in a measuring equipment arrangement configured to allow measurement of aberrometry, topography, pupillometry and pachymetry using a fixing.

Claim 28 (previously presented): The device as recited in claim 24, wherein the device is configured to display an ablation of the eye graphically as an ablation map.

4